

<div>Unit 2</div> <div>Oct 15-Nov 2</div> <div>(15 days)</div>	Understanding of Decimal Place Value		Vocabulary
<u>Standards, Rationale, Strategies, and Misconceptions</u>			
WORKSHOP MODEL OF INSTRUCTION			
<div>Warm Ups</div> <div><ul style="list-style-type: none">• Number Talks• Thinking Devices• Quick Estimation• Data/Line Plot Ideas• Dot Cards• Quick Flash</div>	<div>WORKTIME Lessons</div> <div>5.NBT.1 5.NBT.2 5.NBT.3 5.NBT.4</div> <div><u>Investigative Tasks · Games · Problem-solving</u></div> <div>Lesson 1</div> <div>Decimal problem-types – powers of 10 Focus on structure and what is happening with the number when dividing by a power of 10. Students must explain and justify.</div> <div><ul style="list-style-type: none">▪ Ms. Gomez has 359 dollars. She wants to use this money to buy teddy bears for the children's hospital. If each teddy bear costs 10 dollars, how many teddy bears could she buy? (258, 10) (1263, 100)▪ The pencil factory makes 3,875 pencils a day. They put the pencils into boxes with 10 pencils in each box. How many boxes of pencils do they make in one day? (3,875, 100) (10,500, 100)</div> <div>Lesson 2</div> <div>Representing decimal numbers and patterns. Written symbols and numbers need to be corresponded to the models. Relate to whole number system and fractions for tenths and hundredths. Discover the symmetry of the system by looking at adjacent places.</div> <div>Representing Decimals with Base 10 Blocks, pp. 1-8</div> <div>(example of graphic organizer to use) </div>		

<files/representingdecimalswithbase105.nbt3.pdf>

Lesson 3

Decimal problem-types – powers of 10

Focus on structure and what is happening with the number when dividing by a power of 10. Students must explain and justify based on strategies they create. Analyze the similarities and differences with whole number operations. Make connections between their understanding of fraction notation for tenths and hundredths and the decimal notation. What is happening to the decimal?

- An animal at the zoo eats _____ pounds of food each day. How many days will it take this animal to eat _____ pounds of food?
(10, 78) (10, 374) $(\frac{1}{10}, 6)$ $(\frac{1}{10}, 56)$ $(\frac{1}{10}, 45\frac{1}{10})$ $(\frac{1}{10}, 245\frac{62}{10})$

Lesson 4

Decimals and decimal notations

More opportunity for students to think about decimals and decimal notation in a problem-solving, gaming format.

[Decimal Riddles, pp. 21-26](#)

Lesson 5

Decimal problem-types – powers of 10

Focus on structure and what is happening with the number when dividing by a power of 10. Students must explain and justify. What is happening to the decimal? Will this happen every time?

- Julie has six huge candy bars. If she eats $\frac{1}{10}$ candy bar each day, how long will these six huge candy bars last?
 $(\frac{1}{10}, 12)$ $(\frac{1}{10}, 24)$
- The bakery has 58 pounds of frosting. It takes $\frac{1}{10}$ pound of frosting to frost a cupcake. How many cupcakes could the bakery frost with the frosting they have?

Lesson 6

More Practice with composing and decomposing decimal numbers; place value

Revisit [Decimal Riddles, pp. 21-26](#)

Lesson 7

Open Number Sentences

Focus is on justifying what occurs with powers of 10. Students should reason using fractions, manipulatives, etc. They must explain how they know. Example for "a": "I know that 10 tenths is 1, so $k = 10$ "

Directions: Ask students to work the problems in order. Have base 10 available for those who need it. Have students pair-up to discuss their strategies. Listen for students using relational thinking. Ask student pairs to share their strategies with the whole class.

- 1) $k \times 0.1 = 1$
- 2) $m \times 0.1 = 3$
- 3) $j \times 0.1 = 30$
- 4) $y \times 0.1 = 300$
- 5) $r \times 0.01 = 3$
- 6) $j \times 0.01 = 30$
- 7) $s \times .01 = 300$
- 8) $r \times 0.01 = 43$
- 9) $a \times 0.01 = 43$

Lesson 8

Practice for reading, writing, and interpreting decimal numbers. Two games are introduced. Pull back small groups for students who need more support.

The Place Value Game

You need: a partner or small group, a die, or 0-9 spinner, or number cards 1-9

The goal of this game is to make the largest number possible. Each player writes it in one space on his or her game board.

_____ . _____

Players take turns rolling the die, spinning the spinner, or choosing a number card. Each time a number comes up, every player writes it in one space on his or her game board. Once written, the number cannot be moved. The

winner has to have the largest or smallest number (depending on what you decide) and must be able to read it.
Extension: Both partners need to write the number in expanded form and figure the difference.

AND

Decimal game (game board included) <http://www.k-5mathteachingresources.com/support-files/huntfordecimals5.nbt3.pdf>

Lesson 9

Decimal problem-types – powers of 10

Focus on structure and what is happening with the number when dividing by a power of 10. Students must explain and justify. What is happening to the decimal? Will this happen every time?

- Mrs. Jones has 237 dollars. She wants to use this money to buy books to donate to the children's hospital. If each book costs 10 dollars, how many books could he buy?
(523, 10) (25, 0.10change the books to used comic books and change the person to a student) (110, 0.10)
- Henry uses $\frac{1}{10}$ package of cinnamon in each batch of cinnamon cookies he makes. If Henry has 3 and $\frac{1}{10}$ packages of cinnamon, how many batches of cookies can he make? (make sure to relate the fractions to decimal notation.

Lesson 10

Practice with equations and powers of 10. Ask students to find at least 3 solutions to each problem, more if possible.

- 1) $a \times 10 + b = 53$
- 2) $832 = a \times 100 + b \times 10 + g$
- 3) $874 = b \times 10 + c$
- 4) $874 = c \times 100 + b \times 10$

	Lesson 11		
ASSESSMENT	Science Lessons	INTERVENTIONS	HOMEWORK IDEAS
Formative-NBT			